We claim:

1. A method of forming an encapsulated fiber batt comprising:

conveying a fiber batt in a first direction, the fiber batt having a first and second major surfaces and two minor surfaces, the major surfaces having a substantially horizontal orientation; and

passing the fiber batt past a melt-blowing assembly, the melt-blowing assembly being arranged and configured to extrude a polymer melt and a hot gas stream, the hot gas stream being directed to impact the extruded polymer melt at a volume and at a velocity sufficient to cause attenuation of the polymer melt into polymer melt fibers and to direct the fibers toward a surface of the fiber batt;

the melt-blowing assembly further being arranged and configured to apply a cooling fluid to the polymer melt fibers at a volume and a temperature sufficient to quench a surface portion of a portion of the polymer melt fibers before the polymer melt fibers contact a surface of the fiber batt, the polymer melt fibers retaining sufficient heat to adhere to the fiber batt or other polymer fibers.

2. A method of forming an encapsulated fiber batt according to claim 1, wherein:

the polymer melt includes at least one polymer selected from a group consisting of polypropylene (PP), polyethylene (PE), ethylene-propylene copolymer, polyester, polyethylene terephthalate (PET), nylon or ethylene/vinyl acetate (EVA).

3. A method of forming an encapsulated fiber batt according to claim 1, wherein:

the polymer melt fibers are deposited on the first major surface and both minor surfaces.

4. A method of forming an encapsulated fiber batt according to claim 1, wherein:

the polymer melt fibers are deposited on the first and the second major surfaces and both minor surfaces.

5. A method of forming an encapsulated fiber batt according to claim 3, further comprising:

attaching a premanufactured sheet material to the second major surface.

6. A method of forming an encapsulated fiber batt according to claim 5, wherein:

attaching the sheet material includes

dispensing a vapor retarding layer from a vapor retarder supply;

applying an adhesive to a first surface of the vapor retarding layer;

forcing the first surface of the vapor retarding layer against the second major surface of the fiber batt at an application pressure and for an application time period sufficient to adhere the vapor retarding layer to the fiber batt.

7. A method of forming an encapsulated fiber batt according to claim 6, wherein:

the adhesive includes a hot-melt adhesive and is applied to the first surface by ejecting a stream liquid hot-melt adhesive through a nozzle toward the vapor retarding layer.

8. A method of forming an encapsulated fiber batt according to claim 7, wherein:

the nozzle is a melt-blowing assembly.

9. A method of forming an encapsulated fiber batt according to claim 2, wherein:

the polymer melt fibers are applied to the fiber batt at a first rate measured in mass per batt area; and

the cooling fluid is applied to the polymer melt fibers at a second rate measured in mass per batt area, wherein a ratio of the second rate to the first rate is no less than 1:20.

10. A method of forming an encapsulated fiber batt according to claim 1, wherein:

the cooling fluid is a cooling liquid.

11. A method of forming an encapsulated fiber batt according to claim 10, wherein:

the cooling liquid is water, the water being applied to the polymer fibers as a water mist.

12. A method of forming an encapsulated fiber batt according to claim 11, wherein:

the water mist includes water droplets having an average droplet diameter;

the polymer fibers have an average fiber diameter; and

the ratio of the average droplet diameter to the average fiber diameter is between about 2:1 to 1:10.

13. A method of forming an encapsulated fiber batt according to claim 11, wherein:

the water mist is substantially converted to water vapor before the polymer fibers are deposited on the fiber batt.

14. A method of forming an encapsulated fiber batt according to claim 5, wherein:

the sheet material is selected from a group consisting of vapor retarding layers, kraft paper, vapor permeable layers and liquid permeable layers.

15. A method of forming a plurality of encapsulated fiber batts comprising:

conveying a primary fiber batt in a first direction, the fiber batt having a first and second major surfaces and two minor surfaces, the major surfaces having a substantially horizontal orientation;

passing the primary fiber batt past first melt-blowing assemblies, the first melt-blowing assemblies being arranged and configured to extrude a polymer melt and a hot gas

stream, the hot gas stream being directed to impact the extruded polymer melt at a volume and at a velocity sufficient to cause attenuation of the polymer melt into polymer melt fibers and to direct the fibers toward the major surfaces of the primary fiber batt;

the first melt-blowing assemblies further being arranged and configured to apply a cooling fluid to the polymer melt fibers at a volume and a temperature sufficient to quench a surface portion of a portion of the polymer melt fibers before the polymer melt fibers contact a surface of the fiber batt, the polymer melt fibers retaining sufficient heat to adhere to the fiber batt or other polymer fibers;

separating the primary fiber batt into a plurality of secondary fiber batts, each of the secondary fiber batts including first and second major surfaces and first and second minor surfaces, wherein the first and second minor surfaces of adjacent batts are opposed;

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts;

passing the exposed minor surfaces of the secondary fiber batts past second melt-blowing assemblies, the second melt-blowing assemblies being arranged and configured to extrude a polymer melt and a hot gas stream, the hot gas stream being directed to impact the extruded polymer melt at a volume and at a velocity sufficient to cause attenuation of the polymer melt into polymer melt fibers and to direct the fibers toward the exposed minor surfaces of the secondary fiber batts;

the second melt-blowing assemblies further being arranged and configured to apply a cooling fluid to the polymer melt fibers at a volume and a temperature sufficient to quench a

surface portion of a portion of the polymer melt fibers before the polymer melt fibers contact a surface of the fiber batt, the polymer melt fibers retaining sufficient heat to adhere to the fiber batt or other polymer fibers;

thereby encapsulating each of the secondary fiber batts.

16. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes raising a first group of the secondary fiber batts relative to a second group of the secondary fiber batts.

17. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes lowering a first group of the secondary fiber batts relative to a second group of the secondary fiber batts.

18. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes raising a first group of the secondary fiber batts

relative to the primary fiber batt and lowering a second group of the secondary fiber batts relative to the primary fiber batt.

19. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes rotating the secondary fiber batts in a first rotational direction.

20. A method of forming a plurality of encapsulated fiber batts according to claim 19, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes rotating the secondary fiber batts in a first rotational direction and subsequently rotating the secondary fiber batts in a second rotational direction, the second rotational direction being opposite the first rotational direction.

21. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

separating the opposed surfaces of adjacent secondary fiber batts to expose the minor surfaces of the secondary fiber batts includes increasing the horizontal spacing between adjacent secondary fiber batts.

22. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

passing the exposed minor surfaces of the secondary fiber batts past second melt-blowing assemblies includes passing the first minor surfaces of the secondary fiber batts past a first portion of the second melt-blowing assemblies;

conveying the secondary fiber batts an additional distance in the first direction; and then

passing the second minor surfaces of the secondary fiber batts past a second portion of the second melt-blowing assemblies to complete the encapsulation of the secondary fiber batts.

23. A method of forming a plurality of encapsulated fiber batts according to claim 15, wherein:

passing the exposed minor surfaces of the secondary fiber batts past second melt-blowing assemblies includes passing the exposed minor surfaces of a first group of the secondary fiber batts past a first portion of the second melt-blowing assemblies to complete the encapsulation of the first group of secondary fiber batts;

conveying the secondary fiber batts an additional distance in the first direction; and then

passing the exposed minor surfaces of a second group of the secondary fiber batts past a second portion of the second melt-blowing assemblies to complete the encapsulation of the second group of the secondary fiber batts.